

ACCESSION NR: AP4034569

Academy of Sciences, SSSR,

SUBMITTED: 28Nov63

DATE ACQ: 11May64

ENCL: 00

SUB CODE: 00

NO REF SOV: 000

OTHER: 000

Card 3/3

L 16063-65 EWE(m)/EPE(c)/EXP(j)/I PC-4/Pr-4 ESD(t)/ESB(gs) RM
S/0079/84/034/009/2843/2845

ACCESSION NR: AP4048173

AUTHOR: Shostakovskiy, M. F.; Vlasov, V. M.; Mirskov, R. G.; Loginova, I. Ye. B

TITLE: Synthesis and transformation of organic tin-acetylene compounds III.
Organic tin-acetylene acetals 1

SOURCE: Zhurnal obshchey khimii, v. 34, no. 9, 1964, 2843-2845

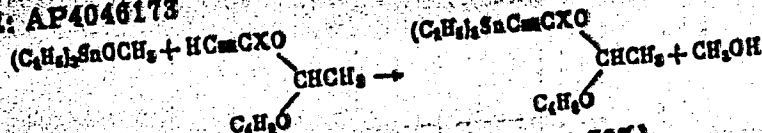
TOPIC TAGS: tin acetylene compound, tin acetylene acetal, acetylene acetal, tin acetylene compound synthesis, infrared spectrum, valence vibration

ABSTRACT: In continuation of earlier work, the interaction between non-symmetrical acetylene acetals with hexa-alkyl stannoxane and trialkylmethoxy stannanes was studied to elucidate, in particular, the role of hydrogen in the acetylene group. Reaction of triethylmethoxystannane with non-symmetrical acetylene acetals of primary, secondary and tertiary alcohols proceeds according to the following schema:

Card 1/3

L 16063-65

ACCESSION NR: AP4046173



X = $-CH_2-$, $-CH_2CH_2-$, $-CH(CH_3)-$, $-C(CH_3)_2-$ (yield about 70%)

Factors such as the ratio of the 2 starter materials, removal of water during the reaction, temperature and duration of reaction were found to influence the yield; a 1:2 ratio of the stannous compound and the acetal, 100C temperature, 3 hours' reaction time and removal of water during the reaction gave best results. Infrared spectra of the end products showed intense bands at a 2144-2148 cm^{-1} frequency corresponding to valence vibration of the $C \equiv C$ bond at the α position with respect to the Sn atom. Four reaction products are presented in a table; a 53.4% yield of 1-/1'-(triethylstannyl)propine-1'-oxy/-1-(butoxy)ethane and 64.3% of 1-/1'-(triethylstannyl)propine-1'-oxy/-1-(butoxy)-ethane was obtained. The possibility of interaction of such compounds was determined for the first time, showing the great mobility of the acetylene hydrogen atom in such reactions. Orig. art. has: 2 formulas and 1 table.

Card 2/3

L-16063-65

ACCESSION NR: AP4046173

ASSOCIATION: Irkutskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR (Irkutsk Institute of Organic Chemistry, Siberian Division of the Academy of Sciences, SSSR)

SUBMITTED: 08Jul63

ENCL: 00

SUB CODE: GC, OC, MT

NO REF SOV: 002

OTHER: 000

Card 3/3

SHOSTAKOVSKIY, V.P.; VILK, V.V.; MILYU, A.G.; LITVINOVA, L.Ye.

Synthesis and transformations of organotin acetylenes and alkyne.
Part 3: Tin organoacetylenic acetals. Izv. Akad. Nauk SSSR
2843-2845 (1974). MIRA 1974.

.. Irkutskiy institut khimicheskoy khimii Sibirskogo nauchnogo tsentra
AN SSSR.

SHCHERBINSKIY, M.F.; VIACHOV, V.M.; MURKOV, B.G.; LITVINOVA, L.V.

Synthesis and transformations of acetylenic organotin compounds.
Part 3: Acetylenic organotin compounds. Izv. Ob. Khim. 46:1970, 3178-3180 (1970).

.. Irkutskiy institut organicheskoy khimii, Irkutsk, 664000, USSR.

SECRET
1. The purpose of this document is to provide information on the activities of the [redacted] in the [redacted] area. The information is classified as SECRET because it contains information that is so classified by the [redacted] and is not to be released to the public without the approval of the [redacted].

2. The information is classified as SECRET because it contains information that is so classified by the [redacted] and is not to be released to the public without the approval of the [redacted].

[illegible]

E 46701-65 EPP(c)/EWP(j)/EWT(m) P-4/Pr-4 RM

UR/0079/65/035/004/0750/0750

ACCESSION NR: AP5010793

AUTHOR: Shostakovskiy, M. F.; Vlasov, V. M.; Mirskov, R. G.TITLE: Synthesis of acetylenic organotin compounds

SOURCE: Zhurnal obshchey khimii, v. 35, no. 4, 1965, 750

TOPIC TAGS: organotin compound, acetylenic organotin compound, alkyne, acetylene derivative, organomet

ABSTRACT: A new preparative method has been developed for organotin compounds of the type $R_3SnC\equiv CR$. First, trialkyltin halides are treated with powdered NaOH or KOH, then with acetylenic compounds containing an acetylenic hydrogen atom. Presumed intermediates are trialkyltin hydroxides and hexaalkylstannoxanes (hexaalkyltin oxides), which react with acetylenic compounds. Triethylphenylethynyltin was obtained in 80% yield from triethyltin chloride and phenylacetylene. [VS]

ASSOCIATION: Irkutskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR (Irkutsk Institute of Organic Chemistry of the Siberian Department of the Academy of Sciences, SSSR)

Card 1/2

1. 10701-65

ACCESSION NR: AP5010793

SUBMITTED: 12 Nov 64

NO REF SOV: 003

ENCL: 00

OTHER: 001

SUB CODE: 00, 00

ATD PRESS: 3231

Card 2/2 11/6

L 7895-66 EWT(m)/EPF(c)/EWP(j)/EWP(t)/EWP(b)/EWA(c) IJP(c) JD/RM
ACC NR: AP5024967 SOURCE CODE: UR/0286/65/000/016/0032/0032

AUTHORS: Shostakovskiy, M. F.; Vlasov, V. M.; Mirskov, R. G.

ORG: none

TITLE: Method for obtaining organic tin compounds, Class 12, No. 173757

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 32

TOPIC TAGS: tin compound, acetylene, organotin compound

ABSTRACT: This Author Certificate presents a method for obtaining organic tin compounds having an Sn-C bond by the reaction of acetylene compounds containing free hydrogen acetylene with organic compounds of the type: R_3SnOR' (R - alkyl, aryl; R' - R, H, SnR_3). To broaden the selection of organic tin compounds, compounds of the formula $CH \equiv CR''$ (R'' has various meanings, e.g., $-CH_2CH_2OCH = OCH_2$, $-CH_2OCH(OC_2H_5)CH_3$, $-CH_2OCH_3$, $-CH_2OSn(C_2H_5)_3$, besides $-C_6H_5$) are used as the initial acetylene compounds. The process is carried out in an organic solvent, e.g., benzene or toluene.

SUB CODE: 07/ - SUBM DATE: 05Nov63
Card 1/1

UDC: 547.419.6.07

L 2557-66 EWT(m)/EPF(c)/ENP(j) RM
ACCESSION NR: AP5024969

UR/0286/65/000/016/0033/0033
547.419,5.6.002.2

AUTHOR: Shostakovskiy, M. V.; Vlasov, V. M.; Mirskov, R. G.; Petrova, V. N.

TITLE: Preparation of tin-containing organosilicon acetylenic compounds. Class 12.
No. 173760

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 16, 1965, 33

TOPIC TAGS: organosilicon compound, organotin compound, acetylene compound

ABSTRACT: An Author Certificate has been issued for a preparative method of tin-containing organosilicon acetylenic compounds of the type, $R'_3SiOR''C \equiv CSnR_3$. The method involves the reaction of $R'_3SnOR''C \equiv CSnR_3$ [sic] with trialkylchlorosilanes at low temperatures. R and R' stand for alkyl and R'' for $-CH_2-$, $-CH_2CH_2-$, $-CH(CH_3)-$, or $-C(CH_3)_2$. [BO]

ASSOCIATION: none

SUBMITTED: 30Jul64

ENCL: 00

SUB CODE: GC

NO REF SOV: 000

OTHER: 000

ATD PRESS: 4108

Card 1/1

SHOSTAKOVSKIY, M.P. VILKOV, V.M., MURZOV, N.V.

Synthesis of cyclophosphamide derivatives. Part II. *Khim. Geterotsiklov*, 1965, no. 11, 141-142.

1. Irkutskiy Institut Khimii i Mekh. Khim. Akad. Nauk SSSR.

KALABINA, A.V.; VLASOVA, N.N.; MIRSKOVA, A.N.

Synthesis and properties of some aromatic mercaptans, sulfides,
and sulfones. Izv. SO AN SSSR no.7 Ser.khim.nauk no.2:99-104
'63. (MIRA 1:10)

1. Irkutskiy gosudarstvennyy universitet i Irkutskiy institut
organicheskoy khimii Sibirskogo otdeleniya AN SSSR.

CHOSTAKOV, Y.M. A.K.VIN, A.G. VILKOV, A.G.

Synthesis and transformations of polyvinyl alcohols Part I
Synthesis and transformations of polyvinyl alcohols. Part I
of polyvinyl alcohols. (Chitosan, 1964, No. 1, 804-809, 145.

Synthesis and transformations of polyvinyl alcohols. Part I
Synthesis and transformations of polyvinyl alcohols. Part I
and its derivatives. (Chitosan, 1964, No. 1, 804-809, 145.

Synthesis and transformations of polyvinyl alcohols. Part I
Synthesis and transformations of polyvinyl alcohols. Part I
and its derivatives. (Chitosan, 1964, No. 1, 804-809, 145.

TEMNIKOVA, T.I.; KARAVAN, V.S.; SEMENOVA, S.N.; ATAVIN, A.S.; MIRSKOVA,
A.N.; CHIPANINA, N.N.; PRELOVSKAYA, R.A.; AKIMOVA, G.S.;
CHISTOKLETOV, V.N.; PETROV, A.A.; MINGALEVA, K.S.; GOLODCYA,
K.G.

Letters to the editors. Zhur. org. khim. 1 no.11:2076-
2078 N '65. (MIRA 18:12)

1. Leningradskiy gosudarstvennyy universitet (for Temnikova,
Karavan, Semenova). 2. Irkutskiy institut organicheskoy khimii
Sibirskogo otdeleniya AN SSSR (for Atavin, Mirskova, Chipanina,
Prelovskaya). 3. Leningradskiy tekhnologicheskiy institut
imeni Lensoвета (for Akimova, Chistokletov, Petrov).

MIRSKOVA, V. N.

"Effect of Iron on the Formation of Toxin by Diphtheria Bacilli in Relation to the Reaction of the Medium and to the Amount of Peptone and of Amino Acids." Molotov State Medical Inst., Molotov, 1974. (Dissertation for the Degree of Candidate of Biological Sciences)

SO: Knizhnaya Letopis', No. 22, 1955, pp 93-105

MIRSKOVA, V.N.; STARKOVA, G.A.; VOYUTSKAYA, M.I.; TARASOVA, N.I.; TSENIKOVA,
K.S.

Use of a reduced dose of pepsin in the purification and concentration
of sera by means of the Diaferm-3 method. Zhur. mikrobiol. epid i
immun. 31 no.6:116 Je '60. (MIRA 13:8)

1. Iz Permskogo instituta vaktsin i sывorotok.
(PEPSIN) (SERUM)

MIRSKOVA, V.N.; VOYUTSKAYA, M.I.; STARKOVA, G.A.; TARASOVA, N.I.; TRET'YAKOVA,
K.I.; RAYKHER, I.I.

Study of antitoxin losses in the purification and concentration
of sera by the diapherm-3 method. Zhur.mikrobiol.epid.i immun.
31 no.8:139-141 Ag '60. (MIRA 14:6)

1. Iz Permskogo instituta vaktsin i syvorotok.
(SERUM)

MIRSKOVA, V.N.; GITTERMAN, L.A.; KHRUSTALEVA, L.A.; KALUGINA, M.V.

Bacterial pollution and pyrogenicity of diaferm-3 sera. Nauch. issl.
proizv. bakt. prep. 10:206-212 '61. MIRA 1962

1. Permskiy institut vaktsin i syvorotok.

MIRSKY, L.

Mirsky, L. On a problem in the theory of numbers.
Simon Stevin 20, 25-27 (1948).

The following theorem is stated: If $r, s, k_1, \dots, k_n, q_1, \dots, q_n$ are given positive integers and $N(x)$ is the number of positive integers n not exceeding x such that all the integers $q_1 n + k_1, \dots, q_n n + k_n$ are r th-power-free, then

$$N(x) = Ax + O(x^{1/(r+1)+\epsilon}),$$

where A is a constant depending on the given parameters (which may be given by means of an infinite series or an infinite product). The author has given a proof earlier [Quart. J. Math., Oxford Ser. 18, 178-182 (1947); these Rev. 9, 80] of the special case in which $q_1 = \dots = q_n = 1$ and remarks in the present paper that the extension of this proof to the general case is quite straightforward. However, the main purpose of this paper is to give a simple direct proof of the fact that $\liminf \{N(x)/x\} > 0$ (and thus $A > 0$) unless $N(x)$ is zero for all x . P. T. Bateman (Princeton, N. J.).

Source: Mathematical Reviews,

Vol. 11 No. 11

Sm

MIRSKY, L.

2

Mirsky, L. On the distribution of integers having a prescribed number of divisors. *Simon Stevin* 26, 168-173 (1949).

Denote by $\Delta(x, k)$ the number of positive integers not exceeding x and having exactly k divisors. An asymptotic expression is obtained for $\Delta(x, k)$ for fixed k and as $x \rightarrow \infty$. In the proof of the result use is made of the prime number theorem and known estimates for the sums $\sum_{p \leq x} p^{-1}$ and $\sum_{p \leq x} p^{-1} \log p$. An asymptotic formula is also given for the number of positive integers not exceeding x and having at most k divisors. *W. H. Simons (Vancouver, B. C.).*

Sm
Lg

Source: *Mathematical Reviews*, 1950 Vol 11 No, 2

MIRSKY, L.

✓ Mirsky, L. The spread of a matrix, *Mathematika* 3 (1956), 127-130.

Let the complex $n \times n$ matrix $A = (a_{ij})$ have characteristic roots $\omega_1, \dots, \omega_n$ ($n \geq 3$). Set $s(A) = \max_{i,j} |\omega_i - \omega_j|$, and $s_R(A) = \max_{i,j} |\operatorname{Re} \omega_i - \operatorname{Re} \omega_j|$; $s(A)$ is called the spread of A . The author shows that

$$s(A) \leq (2\|A\|^2 - \frac{2}{n} |\operatorname{tr} A|^2)^{1/2},$$

where $\|A\|^2 = \operatorname{tr} A^* A$, with equality if and only if A is normal and $n-2$ of its characteristic roots are equal to

each other and to the arithmetic mean of the remaining two. Also,

$$s_R(A) \leq (\|A\|^2 - \frac{1}{n} |\operatorname{tr} A|^2)^{1/2}$$

with a similar condition for equality. If A is normal, $s(A) \geq 3^{1/2} \max_{i,j} |a_{ij}|$, and $s_R(A) \geq \max_{i,j} |a_{ij} + d_{ij}|$.

B. N. Moyle (Vancouver, B.C.).

2
1-F/W

nr6

MIRSKY, L.

Mirsky, L. The norms of adjugate and inverse matrices.
Arch. Math. 7 (1956), 276-277.

The author gives a very simple proof of an inequality of H. Richter (Arch. Math. 5 (1954), 447-448; MR 16, 106). The assertion is that $\| \text{adj } A \|_2 \leq \| A \|_2^{n-1}$ where A is an n -rowed square matrix (complex), $\| A \|_2^2 = \text{trace}(A^* A)$, and $\text{adj } A$ is the "adjugate" of A (so that $A^{-1} = \text{adj } A / \det A$ whenever $\det A \neq 0$). The proof uses the polar decomposition theorem and an easy inequality involving the elementary symmetric functions of a set of non-negative numbers. P. R. Halmos (Chicago, Ill.).

Math

3
1-FW

SM
MT

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134610007-8

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134610007-8"

Mrs. ~~SAAN~~, A. A.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

1. A. A. Ginzburg, *U. S. Review*, 19, 4, 1967, 1041, 1042, 1043, 1044, 1045, 1046, 1047, 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 1162, 1163, 1164, 1165, 1166, 1167, 1168, 1169, 1170, 1171, 1172, 1173, 1174, 1175, 1176, 1177, 1178, 1179, 1180, 1181, 1182, 1183, 1184, 1185, 1186, 1187, 1188, 1189, 1190, 1191, 1192, 1193, 1194, 1195, 1196, 1197, 1198, 1199, 1200, 1201, 1202, 1203, 1204, 1205, 1206, 1207, 1208, 1209, 1210, 1211, 1212, 1213, 1214, 1215, 1216, 1217, 1218, 1219, 1220, 1221, 1222, 1223, 1224, 1225, 1226, 1227, 1228, 1229, 1230, 1231, 1232, 1233, 1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241, 1242, 1243, 1244, 1245, 1246, 1247, 1248, 1249, 1250, 1251, 1252, 1253, 1254, 1255, 1256, 1257, 1258, 1259, 1260, 1261, 1262, 1263, 1264, 1265, 1266, 1267, 1268, 1269, 1270, 1271, 1272, 1273, 1274, 1275, 1276, 1277, 1278, 1279, 1280, 1281, 1282, 1283, 1284, 1285, 1286, 1287, 1288, 1289, 1290, 1291, 1292, 1293, 1294, 1295, 1296, 1297, 1298, 1299, 1300, 1301, 1302, 1303, 1304, 1305, 1306, 1307, 1308, 1309, 1310, 1311, 1312, 1313, 1314, 1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324, 1325, 1326, 1327, 1328, 1329, 1330, 1331, 1332, 1333, 1334, 1335, 1336, 1337, 1338, 1339, 1340, 1341, 1342, 1343, 1344, 1345, 1346, 1347, 1348, 1349, 1350, 1351, 1352, 1353, 1354, 1355, 1356, 1357, 1358, 1359, 1360, 1361, 1362, 1363, 1364, 1365, 1366, 1367, 1368, 1369, 1370, 1371, 1372, 1373, 1374, 1375, 1376, 1377, 1378, 1379, 1380, 1381, 1382, 1383, 1384, 1385, 1386, 1387, 1388, 1389, 1390, 1391, 1392, 1393, 1394, 1395, 1396, 1397, 1398, 1399, 1400, 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1415, 1416, 1417, 1418, 1419, 1420, 1421, 1422, 1423, 1424, 1425, 1426, 1427, 1428, 1429, 1430, 1431, 1432, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1465, 1466, 1467, 1468, 1469, 1470, 1471, 1472, 1473, 1474, 1475, 1476, 1477, 1478, 1479, 1480, 1481, 1482, 1483, 1484, 1485, 1486, 1487, 1488, 1489, 1490, 1491, 1492, 1493, 1494, 1495, 1496, 1497, 1498, 1499, 1500, 1501, 1502, 1503, 1504, 1505, 1506, 1507, 1508, 1509, 1510, 1511, 1512, 1513, 1514, 1515, 1516, 1517, 1518, 1519, 1520, 1521, 1522, 1523, 1524, 1525, 1526, 1527, 1528, 1529, 1530, 1531, 1532, 1533, 1534, 1535, 1536, 1537, 1538, 1539, 1540, 1541, 1542, 1543, 1544, 1545, 1546, 1547, 1548, 1549, 1550, 1551, 1552, 1553, 1554, 1555, 1556, 1557, 1558, 1559, 1560, 1561, 1562, 1563, 1564, 1565, 1566, 1567, 1568, 1569, 1570, 1571, 1572, 1573, 1574, 1575, 1576, 1577, 1578, 1579, 1580, 1581, 1582, 1583, 1584, 1585, 1586, 1587, 1588, 1589, 1590, 1591, 1592, 1593, 1594, 1595, 1596, 1597, 1598, 1599, 1600, 1601, 1602, 1603, 1604, 1605, 1606, 1607, 1608, 1609, 1610, 1611, 1612, 1613, 1614, 1615, 1616, 1617, 1618, 1619, 1620, 1621, 1622, 1623, 1624, 1625, 1626, 1627, 1628, 1629, 1630, 1631, 1632, 1633, 1634, 1635, 1636, 1637, 1638, 1639, 1640, 1641, 1642, 1643, 1644, 1645, 1646, 1647, 1648, 1649, 1650, 1651, 1652, 1653, 1654, 1655, 1656, 1657, 1658, 1659, 1660, 1661, 1662, 1663, 1664, 1665, 1666, 1667, 1668, 1669, 1670, 1671, 1672, 1673, 1674, 1675, 1676, 1677, 1678, 1679, 1680, 1681, 1682, 1683, 1684, 1685, 1686, 1687, 1688, 1689, 1690, 1691, 1692, 1693, 1694, 1695, 1696, 1697, 1698, 1699, 1700, 1701, 1702, 1703, 1704, 1705, 1706, 1707, 1708, 1709, 1710, 1711, 1712, 1713, 1714,

MIRSOYAN, V.S.

Formation of reflexes of standing and walking in rabbits with injured visual analysors in early stages of postnatal ontogenesis [in Armenian with summary in Russian]. Izv.AN Arm.SSR.Biol.1 sel'khoz.nauki 7 no.4:31-42 Ap '54.

(MLRA 9:8)

(BLINDNESS) (REFLEXES)

(4)
AUTHORS: Ilyasov I. I. M. G. Gerasimov, V. N. Kozlov, Y. V. Kozlov
TITLE: The Ternary System of Sodium Fluoroborate and Calcium Fluoroborate
(Troynaya sistema sodnogo i kalcinogo fluoroborata)
PERIODICAL: Zhurnal neorganicheskoy khimii, 1984, Vol. 9, No. 4, pp. 603-607
(USSR)
ABSTRACT: The system Na-K-CiF₃Br was investigated by x-ray diffraction, thermal analysis. The binary systems Na-Br₂, K-Br₂, Na-Br₂-CiBr₃ and K-Br₂-CiBr₃ were studied and phase diagrams for the system K₂Br₂-CiBr₃ were obtained. The complex was synthesized from potassium KB₂Br₂·2CiBr₃. The crystal structure of the complex was determined. Several intermetallic compounds of the ternary system were synthesized. The crystallization diagram of the system was obtained in the ranges CiBr₃-KB₂Br₂·2CiBr₃ and the solid solutions (Na,K)Br₂, which decompose in the Na-K system above 600°C. The phase diagrams and the melting diagram of the system Na-K-CiF₃Br are given in Figure 1 and 2. The melting points of the

GUSEYNOV, M.M., professor; STEPANYAN, A.M., kandidat meditsinskikh nauk;
GUSEYNOVA, L.I., ordinator; MIRSOYEVA, M.G., ordinator

Clinical aspects of lichen ruber planus. Vest.ven. i derm. no.3:
48-49 My-Je '56. (MLRA 9:9)

1. Iz kafedry kozhnykh i venericheskikh bolezney (sav. - prof.
N.N.Guseynov) Azerbaydzhanskogo gosudarstvennogo instituta usover-
shenstvovaniya vrachey.

(LICHEN PLANUS
ruber (Rus))

MIRSOTYEVA, M.N.

New species of flea *Paradoxopsyllus gussevi* sp.n. from Georgia.
(MIRA 7:8)
Zool.zhur. 33 no.4:946-947 J1-Ag '54.

1. Stavropol'skiy nauchno-issledovatel'skiy institut Kavkaza i
Zakavkas'ya Ministerstva zdravokhraneniya SSSR.
(Georgia--Jumping plant lice) (Jumping plant lice--Georgia)

BAGBANLY, I. L.; ZEYNALOVA, Kh. L.; MIRSOYEVA, T. R.

New type of cement based on alunite from the Zaglik deposits.
Dokl. AN Azerb. SSR 11 no. 4: 249-253 '55. (MLRA 8:10)

1. Institut khimii Akademii nauk Azerbaydzhanskoy SSR. Pred-
stavleno deystvitel'nyy chlenom AN Azerbaydzhanskoy SSR M. A. Ka-
shkayevm.

(Zaglik--Alunite) (Cement)

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657 D. Grade only reported. No. of regions visited not given. No further information available.

PRINTING: This book is illustrated by caricatures, portraits, cigarette, and novel and editorial vignettes.

[illegible]

WILLIAM D. COOPER

WAB E. CON 278 E 710

Agnes, C. B. Christiana Means. Difference Made for the Noble Pair
1890-1891. 1891-1892. 1892-1893. 1893-1894. 1894-1895. 1895-1896. 1896-1897. 1897-1898. 1898-1899. 1899-1900. 1900-1901. 1901-1902. 1902-1903. 1903-1904. 1904-1905. 1905-1906. 1906-1907. 1907-1908. 1908-1909. 1909-1910. 1910-1911. 1911-1912. 1912-1913. 1913-1914. 1914-1915. 1915-1916. 1916-1917. 1917-1918. 1918-1919. 1919-1920. 1920-1921. 1921-1922. 1922-1923. 1923-1924. 1924-1925. 1925-1926. 1926-1927. 1927-1928. 1928-1929. 1929-1930. 1930-1931. 1931-1932. 1932-1933. 1933-1934. 1934-1935. 1935-1936. 1936-1937. 1937-1938. 1938-1939. 1939-1940. 1940-1941. 1941-1942. 1942-1943. 1943-1944. 1944-1945. 1945-1946. 1946-1947. 1947-1948. 1948-1949. 1949-1950. 1950-1951. 1951-1952. 1952-1953. 1953-1954. 1954-1955. 1955-1956. 1956-1957. 1957-1958. 1958-1959. 1959-1960. 1960-1961. 1961-1962. 1962-1963. 1963-1964. 1964-1965. 1965-1966. 1966-1967. 1967-1968. 1968-1969. 1969-1970. 1970-1971. 1971-1972. 1972-1973. 1973-1974. 1974-1975. 1975-1976. 1976-1977. 1977-1978. 1978-1979. 1979-1980. 1980-1981. 1981-1982. 1982-1983. 1983-1984. 1984-1985. 1985-1986. 1986-1987. 1987-1988. 1988-1989. 1989-1990. 1990-1991. 1991-1992. 1992-1993. 1993-1994. 1994-1995. 1995-1996. 1996-1997. 1997-1998. 1998-1999. 1999-2000. 2000-2001. 2001-2002. 2002-2003. 2003-2004. 2004-2005. 2005-2006. 2006-2007. 2007-2008. 2008-2009. 2009-2010. 2010-2011. 2011-2012. 2012-2013. 2013-2014. 2014-2015. 2015-2016. 2016-2017. 2017-2018. 2018-2019. 2019-2020. 2020-2021. 2021-2022. 2022-2023. 2023-2024. 2024-2025. 2025-2026. 2026-2027. 2027-2028. 2028-2029. 2029-2030. 2030-2031. 2031-2032. 2032-2033. 2033-2034. 2034-2035. 2035-2036. 2036-2037. 2037-2038. 2038-2039. 2039-2040. 2040-2041. 2041-2042. 2042-2043. 2043-2044. 2044-2045. 2045-2046. 2046-2047. 2047-2048. 2048-2049. 2049-2050. 2050-2051. 2051-2052. 2052-2053. 2053-2054. 2054-2055. 2055-2056. 2056-2057. 2057-2058. 2058-2059. 2059-2060. 2060-2061. 2061-2062. 2062-2063. 2063-2064. 2064-2065. 2065-2066. 2066-2067. 2067-2068. 2068-2069. 2069-2070. 2070-2071. 2071-2072. 2072-2073. 2073-2074. 2074-2075. 2075-2076. 2076-2077. 2077-2078. 2078-2079. 2079-2080. 2080-2081. 2081-2082. 2082-2083. 2083-2084. 2084-2085. 2085-2086. 2086-2087. 2087-2088. 2088-2089. 2089-2090. 2090-2091. 2091-2092. 2092-2093. 2093-2094. 2094-2095. 2095-2096. 2096-2097. 2097-2098. 2098-2099. 2099-2100. 2100-2101. 2101-2102. 2102-2103. 2103-2104. 2104-2105. 2105-2106. 2106-2107. 2107-2108. 2108-2109. 2109-2110. 2110-2111. 2111-2112. 2112-2113. 2113-2114. 2114-2115. 2115-2116. 2116-2117. 2117-2118. 2118-2119. 2119-2120. 2120-2121. 2121-2122. 2122-2123. 2123-2124. 2124-2125. 2125-2126. 2126-2127. 2127-2128. 2128-2129. 2129-2130. 2130-2131. 2131-2132. 2132-2133. 2133-2134. 2134-2135. 2135-2136. 2136-2137. 2137-2138. 2138-2139. 2139-2140. 2140-2141. 2141-2142. 2142-2143. 2143-2144. 2144-2145. 2145-2146. 2146-2147. 2147-2148. 2148-2149. 2149-2150. 2150-2151. 2151-2152. 2152-2153. 2153-2154. 2154-2155. 2155-2156. 2156-2157. 2157-2158. 2158-2159. 2159-2160. 2160-2161. 2161-2162. 2162-2163. 2163-2164. 2164-2165. 2165-2166. 2166-2167. 2167-2168. 2168-2169. 2169-2170. 2170-2171. 2171-2172. 2172-2173. 2173-2174. 2174-2175. 2175-2176. 2176-2177. 2177-2178. 2178-2179. 2179-2180. 2180-2181. 2181-2182. 2182-2183. 2183-2184. 2184-2185. 2185-2186. 2186-2187. 2187-2188. 2188-2189. 2189-2190. 2190-2191. 2191-2192. 2192-2193. 2193-2194. 2194-2195. 2195-2196. 2196-2197. 2197-2198. 2198-2199. 2199-2200. 2200-2201. 2201-2202. 2202-2203. 2203-2204. 2204-2205. 2205-2206. 2206-2207. 2207-2208. 2208-2209. 2209-2210. 2210-2211. 2211-2212. 2212-2213. 2213-2214. 2214-2215. 2215-2216. 2216-2217. 2217-2218. 2218-2219. 2219-2220. 2220-2221. 2221-2222. 2222-2223. 2223-2224. 2224-2225. 2225-2226. 2226-2227. 2227-2228. 2228-2229. 2229-2230. 2230-2231. 2231-2232. 2232-2233. 2233-2234. 2234-2235. 2235-2236. 2236-2237. 2237-2238. 2238-2239. 2239-2240. 2240-2241. 2241-2242. 2242-2243. 2243-2244. 2244-2245. 2245-2246. 2246-2247. 2247-2248. 2248-2249. 2249-2250. 2250-2251. 2251-2252. 2252-2253. 2253-2254. 2254-2255. 2255-2256. 2256-2257. 2257-2258. 2258-2259. 2259-2260. 2260-

Armed Forces, Government, and Private. At least one-third of the total production of the United States is now produced for the Government. The Government is the largest customer of the United States. The Government is the largest customer of the United States. The Government is the largest customer of the United States.

File # DISPATCH

[illegible]

2. Acceleration at the critical speed in a hovercraft-land

and is amount to the

discrepancy in cause to effect and effect to cause and in
degree of precision so that cause is actual, effect is
potential and effect is from actual, but cause is

• **Winkler, R.** Comparison of measured drilling with computed drilling
of the prediction of a National Service

Aljourn, T. Decontamination of Natural Dismantling by Means of Lightning
Fields

Fig. 1. Observations on Camp Stress in the Field.
The first three months of the study are shown in the figure below.

PAGE NO. CHARACTERISTICS

Fig. 1. One Design and the Framing of the Mountain Process on a
Single-Plate Automobile Frame: Last

Libr. & Director of Bureau of Census and Statistics of
and for the purpose of making studies with regard to the
589

CLINTON, N.Y. New York of Elmer Palmer
Bridges, and L. Bridges. On the significance of laminae
in

[illegible]

Cylinders made of Elonal (Co-Al-Cr-N alloy)
Sintered Sintering Made of Elonal (Co-Al-Cr-N alloy)

901

Capt. A. M. ... Experimental Data on the
... and ...
... and ...
... and ...

907

Investigation of Self-Defense
 Tampa, A. G. Nelson, J. Murphy, E. Evans, and E. Colan. In-
 vestigation of Alleged Contact Police for Electric
 397

well as the following:

Chloride

and the following: Investigation of the Powder

Abstract

MIRSU, O.

light concretes (mortars) with the heating-plant ashes. Studiî tehn
Timisoara 9 no.1/2:63-88 Ja-Je '62.

MIRT, O.: RAPATZ. F.

Nonalloy steels for tool manufacturing. n. 345

TECHNICKA PRACA. Czechoslovakia. Vol. 7, No. 8, Aug. 1955

Monthly list of East European Accessions (EEAI), LC. Vol. 8, No.9, September 1959
Incl.

MIRSU, O.; VOINA, N.I.

Utilization of the debris of nonferrous ore flotation for recon-
structions. Bul'niy Zhurnal 7:3, 3-329 '62.

M. 11. 1.

Elements influencing lightweight concrete structure.
Studii chim Timisoara 10 no. 4. 276-303. 01-1 1973.

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134610007-8

APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R001134610007-8"

83861

S/112/1/XX / 1.1.1.1.1.

AC52 AC52

The Growing of AlSb and InSb Single Crystals and a Study of Their Properties

insufficient holding resulted in a stratification of an ingot by donor admixtures. All single crystals were of p-type which was ascribed to the effect of donor admixtures. Samples of n-type were obtained when all zinc was removed from the excess of Al and Sb did not change the type of conductivity. It was noted that the latter circumstance can be utilized for estimating the probability of separations in the case of semiconducting type fusing. AlSb specimens had $\rho = 0.03-0.4 \text{ mhm}\cdot\text{cm}$. Some specimens had $\mu_p = 1200 \text{ cm}^2/\text{v}\cdot\text{sec}$. $\sigma_g = 1.2 \cdot 10^{18} \text{ cm}^{-3}$, whereby the resistivity after annealing was $\rho_g = 0.03-0.4 \text{ mhm}\cdot\text{cm}$. A stratification of AlSb was observed after repeated zone recrystallization at first a donor and then an acceptor admixture. At that AlSb had $\rho = 20-200 \text{ mhm}\cdot\text{cm}$, $\mu = 178 \text{ cm}^2/\text{v}\cdot\text{sec}$, $\sigma_g = 1.2 \cdot 10^{18} \text{ cm}^{-3}$. The dependence of ρ on the number of zones passed is explained by a partial compensation of donor and acceptor admixtures when their charge is equal to the possibility of formation of chemical compounds and p-n transitions in donor-acceptor mixtures. Institut metallurgii AN SSSR, (Institute of Metallurgy of the AN SSSR).

V.A.K.

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

AID P - 1000

Subject : USSR/Electricity

Card 1/2 Pub. 27 - 18/30

Authors : Besekerskiy, V. A., Kand. of Tech. Sci., Leningrad,
and Mirtez, Bohumil, Praha, Czechoslovakia

Title : Electronic gear for the stabilization of a-c follow-up
drives. Article by Ye. I. Baranchuk, this Journal,
No. 6, 1953 (Discussion)

Periodical : Elektrichestvo, 6, 75-76, Je 1955

Abstract : The first author sharply criticizes Baranchuk's
theoretical investigations as compared with the diagrams
presented, which are provided with a negative feedback,
while the conclusions are based on the assumption of a
positive one. The author proves in examples that
resulting formulas are false. He also points to sever-
al other faulty statements of the article. The second
author disagrees with the statement in the article
discussed that electronic stabilizers are better and more
reliable than other types. He demonstrates his contention

AID P - 2829

Elektrichestvo, 6, 75-76, Je 1955

Card 2/2 Pub. 27 - 18/30

in a numerical example.

Institution : None

Submitted : No date

MIRTES, B.

821.375.2.024 : 821.317.79 : 681.142
1898. DIRECT-CURRENT AMPLIFIER FOR ANALOGUE
COMPUTERS, B. Mirtes.

Slaboproudy Obzor, Vol. 17, No. 11, 651-7 (1956). In Czech.

A d.c. amplifier is the basic element of analogue computers, in which it is combined with appropriate R and C components to perform various mathematical operations. A highly stable amplifier is described in some detail (with circuit diagrams and frequency response). The device consists of the actual d.c. amplifier (main unit) and an auxiliary a.c. amplifier. The main amplifier employs three valves, the first of which is a double triode with a common cathode resistance; the first half of the double triode contains also an anode resistance which is directly coupled to the grid of the second valve. Two computing elements (R or C) are connected between the input grid of the first valve, and the input and output terminals of the main amplifier. The auxiliary unit comprises a mains-driven change-over relay and is connected between the input grid of the main amplifier and the grid of the second half of the double triode. The function of the auxiliary unit is to eliminate the drift in the main amplifier. Analytical expressions for the response of the system are derived, and it is shown that after some simplification they can be used to design the amplifiers. The main unit has a gain of 50 000 and its output resistance is 2 Ω . The system can be employed in the following operations: inversion, addition, multiplication, division, integration and derivation. More complex operations can be performed by combining a number of amplifiers. H.S. Sidormics.

3
1 HEID

System
RSC

MIRTES, B.

1573. A.C. SERVOMECHANISMS. B. Mirtes.
 Masoprosty Oboor, Vol. 18, No. 4, 216-24 (1977). In Czech.
 The compensation of carrier-frequency ($\omega_c = 80$ c/s) servo-
 mechanisms is considered. The compensating system consists of a
 phase-shifter and a proportional plus derivative stabilizing network.
 An expression for the transfer function of the stabilizing network is
 derived and two practical circuits approximating the function are
 shown. Frequency characteristics of the two networks are found to
 be very similar; the simpler network (an RC bridged-T) is, there-
 fore, preferable to the second RC twin-T network. A satisfactory
 phase-shifter can be in the form of a two-stage RC ladder which
 functions as a low-pass filter and gives a shift of 100° . The effect
 of component tolerances on the performance of the compensating
 networks was investigated by means of a special simulating servo-
 mechanism. It was found that the tolerances should be 2% for the
 phase shifter and 0.5% for the stabilizing network. R.S. Sidorowicz

NS *alg*

82759

Z/039/60/021/09/004/006
E140/E535

9.2540

AUTHOR: Mirtes, Bohumil, Engineer
TITLE: Stabilization of Precision dc Supplies

PERIODICAL: Slaboproudý obzor, 1960, Vol.21, No.9, pp 542-547

TEXT: The article describes the design of stabilized high precision dc supplies using a Weston cell as the reference potential. Two types of supplies are described employing the techniques of analog-computer operational amplifiers for long-term stable 250 V supplies. The tolerance obtained is claimed to be 0.1 mV (long-period). The first solution employs a normal dc stabilizer with the long-term drift corrected by a chopper comparing a fraction of the output voltage with the voltage of the Weston cell in the manner of zero-drift correction of operational amplifiers. It is thus a stabilizer with two reference potentials the normal (45 V) battery and the Weston cell. The second solution employs only a single reference, the Weston cell, with an RC-coupled amplifier to correct for short-term drift. A detailed analysis of the feedback circuit is made using logarithmic frequency characteristics. There are 8 figures and 5 references

Card 1/2

82759

Z/039/60/021/09/004/006
E140/E535

Stabilization of Precision dc Supplies
4 Czech and 1 Soviet.

ASSOCIATION: Výzkumný ústav matematických strojů
(Computer Research Institute)

SUBMITTED: April 7, 1960

Card 2/2

MIRTES, Bohumil, inz.

Numerical techniques in mensuration and automation. Slaboproudy obzor
22 no.8:449 '61.

1. Vyskumny ustav matematickych stroju, Praha.

(Mensuration) (Automation)

MIRTES, Bohumil, inz.

Analogue memory. Slaboproudy obzor 23 no.11:660-661 N '62.

MIRTES, B., inz.

Long-lasting integrator with digital readout. Slaboproudy
obzor 24 no.5:309-311 My '63.

MIRTES, Bohumil, inz.

Transistor amplifiers of low direct-current voltage. Czech tech.
11 no.10:367-371 0 '64.

MIRTES, Bohumil

Mathematical expression of real characteristics of principal
decision elements of analog computers. Strof na zprac inf
9:183-197 1963.

1. Issledovatel'skiy institut matematicheskikh mashin, Ufa.

MIRKO, Bohumil, inz.

Special anal. computers. Automati. re. d. n. l. 1. 56-
1963.

MIPTES, Bohumil, inz.

Direct current differential amplifiers. Sdel tech 12 no. 3:
99-103 Mr '64.

L 51795-63 EED-2/EWP(1) Pg-4/Pk-4/Pq-4 IJP(c) GG/BB
 ACCESSION NR: AP5016907 CZ/0014/64/000/010/0362/0365
 AUTHOR: Mirtes, Bohumil (Engineer, Candidate of sciences) 32
 TITLE: Transistorized computing amplifiers B
 SOURCE: Sdelovaci technika, no. 10, 1964, 362-365 16 ✓
 TOPIC TAGS: transistorized amplifier, computer component
 ABSTRACT: Principles are discussed on which is based the design of transistorized operational amplifiers. Specific information is presented on the TPZ 1 and TPZ 21 transistorized operational amplifiers designed at the Research Institute for Mathematical Machines (Vyzkumny ustav matematickych stroju) as components for the Czechoslovak analog computer, MNDA 40 T, and for the building of single-purpose analog systems. A table is included comparing technical data of the two amplifiers with the vacuum-tube amplifier, ON 260 13.
 Orig. art. has: 8 figures, 8 formulas, 1 table.
 ASSOCIATION: none
 SUBMITTED: OC
 NO REF SOV: 000 ENCL: 00
 OTHER: 006 SUB CODE: EC, DP
 JPRS
 Card 1/1 LC

L 29319-66

ACC NR: AP6006160

(A)

SOURCE CODE: CZ/0078/65/000/010/0019/0019

AUTHOR: Hron, Jaroslav (Prague); Kliment, Jiri (Prague); Kryzanek, Vladimír (Engineer, Prague); Hirten, Bohumil (Engineer, Prague); Vytiska, Alois (Engineer, Prague) 50
B

ORG: none

TITLE: [An electrical indicator circuit] CZ Pat. No. PV 5792-63

SOURCE: Vynalezy, no. 10, 1965, 19

TOPIC TAGS: ~~signal detection, signal interference~~ computer, amplifier stage, ELECTRONIC SIGNAL, ELECTRONIC CIRCUIT, ELECTRIC MEASURING INSTRUMENT, CONTROL CIRCUIT

ABSTRACT: An electrical indicator circuit is described which serves on the one hand for the successive individual indication that the level of an electrical signal has been exceeded at a number of controlled electrical outputs, and on the other as an indicator that the level has been exceeded of the electrical signal of all the controlled electrical outputs to one point in parallel, for example, as an overload indicator for computing amplifiers, in particular transistorized computing amplifiers. In this device the electrical outputs of the individual controlled points are connected on the one hand directly to the contacts of one level of a multiple position switch, and through

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L 29319-66

ACC NR, AP6006160

its branch to the input of the indicating device with the overload indicator, and on the other through resistors to a common conductor which is connected through a branch to the second level of the switch.

SUB CODE: 09/ SUBM DATE: 22Oct63

Card 2/2 BK

MIRTS, Bohumil, Ing. CSc.

Hybrid computers. Automatizace 8, no. 3: 70-75. Mr. 1965.

1. Research Institute of Mathematical Machines, Prague.

L 10464-66 EMP(1) IJP(c) BB/GG
ACC NR: AP6003534

SOURCE CODE: CZ/0014/65/000/002/0057/0060

AUTHOR: Mirtes, Bohumil (Engineer, Candidate of sciences)

ORU: none

TITLE: MEDA-40T transistorized analog computer

SOURCE: Sdelovaci technika, no.2, 1965, 57-60

TOPIC TAGS: analog computer, transistorized circuit, circuit design, computer circuit

ABSTRACT: A description, photographs, circuit diagrams and tabulated data are given for the new analog computer that the Aritma National Enterprise is placing on the market in 1965. Improvements over the MEDA-2 tube model are emphasized. Orig. art. has: 6 figures and 2 tables. [JPRS]

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 004

HW
Card 1/1

L 01956-67

ACC NR:

AP6020177 (A)

SOURCE CODE: CZ/0078/66/000/002/0016/0016

AUTHOR: Mirtes, Bohumil (Engineer; Candidate of sciences; Prague)

ORG: none

TITLE: Computer servosystem. CZ Pat. No. PV 1640-65. Class 42

SOURCE: Vynalezky, no. 2, 1966, 16

TOPIC TAGS: servosystem, servomotor, servoamplifier, computer circuit

ABSTRACT: A computer servosystem controlling several circuits is introduced. The circuits are connected with the system's principal branch formed by the servomotor and an amplifier, via separate breakers. The first circuit consists of a feedback resistor and a potentiometer whose wiper is positioned by the output shaft which, in turn, is driven by the servomotor through a transmission. The second circuit is formed by a second feedback resistor and a tachometer generator driven by the servomotor shaft. The third circuit consists of a feedback impedance connected with the tachometer generator. The fourth circuit is formed by a resistor and a voltage source corresponding to the initial condition. The fifth circuit consists of a system of input voltage sources connected to the main line via a cascade of input resistors. One feature of the system is given.

[KP]

Card 1/1 SUB CODE: 05/ SUBM DATE: 11Mar65/

ACCESSION NR: AT4040383

Z/2503/63/000/009/0183/0197

AUTHOR: Mirtes, Bohumil (Mirtes, Bogumil)

TITLE: Mathematical determination of actual properties of basic computing elements for analog computers

SOURCE: Ceskoslovenska akademie ved. Vyzkumny ustav matematickych stroju. Stroje na zpracovani informaci, no. 9, 1963, 183-197

TOPIC TAGS: transfer function, analog computer, computer, summing amplifier, integrating amplifier, position control servo, rate servo

ABSTRACT: A precise analog is generally based on the use of summing and integrating amplifiers and by position control and rate servomechanisms. When evaluating the simulation errors, corresponding to the given system of equations, it is necessary, in addition to the approximations made in the selection of the analog, to comprehend the actual behavior of the computing elements. Author shows that the actual behavior of four basic computing elements can be described by simple transfer functions and relationships which are actually identical for all four considered cases. In the case of the summing amplifier, the following equations are valid:

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ACCESSION NR: AT4040383

$$u_o = - \sum_{i=1}^n k_i u_i \left(r_{DO} k_i - \frac{R_0}{R_i} \right) \quad (1)$$

$$KG(p) = \frac{1}{1 + \tau_{\delta_{oy}} p} \quad (2)$$

$$[u_o(p)]_{oy} = - \sum_{i=1}^n u_i \frac{R_0}{R_i} \frac{1 + \tau_i p}{1 + \tau_o p} \frac{1}{1 + \tau_{\delta_{oy}} p} \quad (3a)$$

$$= - \sum_{i=1}^n u_i \frac{R_0}{R_i} \frac{1}{1 + (\tau_{\delta_{oy}} + \tau_o - \tau_i) p} \quad (3b)$$

$$[u_{Og}]_{oy} = [Ux]_{on} = \left[\frac{k_T}{k_p} \frac{dx}{dt} \right]_{oo} = - \left(u_g \frac{R_0}{R} \frac{1}{1 + \tau_g R_0} \right) \quad (4)$$

In the case of the integrating amplifier, the following relationships are used:

$$u_o(p) = - \sum_{i=1}^n k_i \frac{u_i}{p} \dots k_i = \frac{1}{C_o R_i} \quad (5a)$$

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ACCESSION NR: AT4040383

$$u_0(t) = - \int_{t_0}^t \left(\sum_{i=1}^n k_i u_i \right) dt + u_0(t_0). \quad (5b)$$

$$[KG(p)]_{\infty} = \frac{\tau_0 p}{1 + \tau_0 p} \frac{1}{1 + \tau_{0\infty} p}. \quad (6)$$

$$[u_0(p)]_{\infty} = - \sum_{i=1}^n \frac{u_i}{C_0 R_i p} \frac{C_0 r_i p}{1 + C_0 r_i p} \frac{\tau_0 p}{1 + \tau_0 p} \frac{1 + \tau_i p}{1 + \tau_{0\infty} p}. \quad (7a)$$

$$[u_0(p)]_{\infty} = - \sum_{i=1}^n \frac{u_i}{C_0 R_i p} \frac{(\tau_0 C_0 r_i) / (\tau_0 + C_0 r_i) p}{1 + (\tau_0 C_0 r_i) / (\tau_0 + C_0 r_i) p} \frac{1}{1 + (\tau_{0\infty} - \tau_i) p}. \quad (7b)$$

$$[u_0(p)]_{\infty} = - \left(u_0 \frac{1 + C_0 R_0}{C_0 R_0} + \frac{1}{C_0 p} \right) = - \frac{1}{C_0 p} \left(\frac{u_0}{R} + t_0 \right). \quad (8a)$$

$$[u_0(t)]_{\infty} = - \int_{t_0}^t \left(\frac{u_0}{R} + t_0 \right) \frac{dt}{C_0} + u_0(t_0) = - \left(\frac{u_0}{R} + t_0 \right) \frac{t - t_0}{C_0}. \quad (8b)$$

The equations

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ACCESSION NR: AT4040383

$$Ux = - \sum_{i=1}^n k_i u_i \left(r_{de} k_i - \frac{R_0}{R_i} \right). \quad (9)$$

$$u_{0j} = u_{ej} \cdot x = - \frac{u_{ej}}{U} \sum_{i=1}^n k_i u_i \quad (10a)$$

$$u_{0j} = u_{ej} \cdot f(x) = - u_{ej} \cdot f \left(\frac{\sum_{i=1}^n k_i \cdot u_i}{U} \right). \quad (10b)$$

$$EG(p) = \frac{1}{1 + \tau \delta_{oy} p} \quad (11)$$

$$[u_{0g}]_{oy} = [Ux]_{on} = \left[\frac{k_T}{k_p} \frac{dx}{dt} \right]_{oo} = - \left(u_g \frac{R_0}{R} \cdot \frac{R}{1_g R_0} \right) \quad (12)$$

are used for the position control servomechanism and

$$\frac{k_T}{k_p} \cdot \frac{dx}{dt} = - \sum_{i=1}^n k_i u_i \left(r_{de} k_i - \frac{R_0}{R_i} \right). \quad (13)$$

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ACCESSION NR: AT4040383

$$u_{0j}(p) = u_{0j} \cdot x(p) = -u_{0j} \cdot \frac{k_x}{k_r} \sum_{i=1}^n \frac{k_i \mu_i}{p}, \quad (14a)$$

$$u_{0j}(t) = -u_{0j} \cdot \frac{k_x}{k_r} \int_0^t \left(\sum_{i=1}^n k_i \mu_i \right) dt + u_{0j}(t_0). \quad (14b)$$

$$KG(p) = \frac{1}{1 + \tau_{\delta} \text{ }_{oy} p} \quad (15)$$

$$[u_{0g}]_{oy} = [Ux]_{on} = \left[\frac{k_T}{k_p} \frac{dx}{dt} \right]_{oo} = - \left(u_g \frac{R_0}{R} \wedge i_g R_0 \right) \quad (16)$$

are used for the rate servo. This article also includes a table with boundary values of the constants k_1 and linearly parameters which may be encountered in modern high-quality computing elements.

ASSOCIATION: Issledovatel'skiy institut matematicheskikh mashin, Prague (Computer Research Institute)

Card 5/6

ACCESSION NR: AT4040383

SUBMITTED: 03Sep62

DATE ACQ: 18Jun64

ENCL: 00

SUB CODE: DP, MA

NO REF SOV: 001

OTHER: 002

Card 6/8

MIRTOFANOV, A.A.; SMIRNOV, A.A.

Improving effective characteristics of the IANZ engines. Avt.
prom. no.1:5-8 Ja '59.
(MIRA 12:1)

1. Gosudarstvennyy soyuznyy ordena Trudovogo Krasnogo Znameni
nauchno-issledovatel'skiy avtomobil'nyy i avtomotorny institut
i Yaroslavskiy motornyy zavod.
(Gas and oil engines)

MIRTOV, B. A.

Winds

One formula of instrumental meteorology. Met. i gidrol. no. 6, 1946.

9. Monthly List of Russian Accessions, Library of Congress, November 1952. Uncl.

MIRTOV, B.A. (Reviewed by)

Meteorology - Bibliography

"Principles of methods of aerophysical measurements." Izv. AN SSSR. Ser. geogiz. no. 2, 1952.

Monthly List of Russian Accessions, Library of Congress, August, 1952 UNCLASSIFIED.

MITROV, B.A.; BOYKOV, A.A.

A mercury vacuum shut-off device designed for gas inlets. Zav.
lab.21 no.7:871-872 '55. (MIRA 8:10)

1. Geofisicheskiy institut Akademii nauk SSSR
(Vacuum apparatus)

MIRTOV, B.A.

300

Thermal manometer for measuring the pressure of
gases up to 20 mm. of mercury pressure. (A. A.
Mirtov. Zhur. F.B.A. Psk. 75, 405-714 (1951). A simplified
sealed wire method is described—Pt heated up to 450°—
to measure pressures in the range from 10⁻⁷ to 60 mm.
Press H. Rathmeyer

②

11/11

MIRTOV, B. A.

3/5

551,501.70-1021,451

The Study of the Upper Atmosphere

by Means of Rockets, at the

Academy of Sciences, U.S.S.R.

B. M. Polgskov, B. A. Mirtoy

Experiments to date include

Int. Comp. Rockets and

Guided Missiles, Part

Doc., 1956

International

...at 40-50 km. Instruments were
carried in containers, ejected from the rockets by special
mortars and parachuted to earth. Work will be extended
during the 1957, and measurements will be made at
altitudes up to 1,000 km, and at different geographical
locations.

(R. A. E. Transl., (626), 7pp., Jan., 1957, U.K.)

MIRTOV, B. A. and POLOSKOV, S. M.

"The Study of the Upper Atmosphere with the Aid of Rockets
at the Academy of Sciences of the USSR": a paper submitted at the International
Congress of Rockets and Guided Missiles for Continental Connections and
Telecommunications, 3-8 Dec 56, Paris.

1093091-C

AUTHOR
TITLE

MIRTOV B.A.

The Investigations by Means of Rockets
of the Atmosphere at Great Heights.
(Rikotryye izsledovaniya atmosfery s pomoshchyu
vysotakh.- Russian)

PERIODICAL

Uspekhi Fiz. Nauk 1967 Vol 60, No 10, pp 61-62 (USSR)

ABSTRACT

At first the significance of the composition of the atmosphere for some problems is described in short, viz for measuring pressure, computation of the temperature in great heights, the problem of the ionosphere, the determination of the level of the distribution of the gases due to gravitation, the dissipation of the atmosphere into the interstellar space, the corpuscular solar radiation, the motion of rockets and satellites, the endangering of rockets and satellites by atmospheric domains with chemically active molecules. This is only a selection of the problems concerned. Theoretical computations differ considerably from experimental results hitherto obtained.

Direct Investigations: Already for some time samples from higher strata of the atmosphere have been taken down and analysed by means of balloons. The limits of the gravitational distribution was, however, never

CARD 1/5

The Investigations of Means of Rockets of the Atmosphere at Great Heights

attached to the rocket and the rocket is a mixture of the atmosphere of the height of the rocket to 30 km. For the investigation of the atmosphere the flight radar-frequency mass spectrometers of the BENNET type are used. In this way also the temperature active but only little stable species of the higher atmosphere can be determined: O, OH, N, V, etc. The present paper tells of Soviet investigations on the occasion of which air samples were taken in the help of balloons which were investigated in the laboratory.

The difficulties of the investigation and the possibilities of investigations carried out by means of rockets:

The samples taken down from very great heights naturally contain only very small amounts of gas. Microanalytical and ultra-microanalytical methods have therefore to be used. The investigations of the composition of the air in great heights by means of rockets are divided into three stages:

- a) Extraction of the sample,
- b) Storage of the sample,
- c) Analysis of the sample. These stages are discussed here in detail

CARD 2/5

51-11-208

The Investigation by Means of Rockets of the Composition
of the Atmosphere at Great Heights.

Experimental results: From 1931 to 1936 the author
studied the problem of the determination of the composition
of the air in great heights by means of the various
discussed methods. Not all experiments were successful,
here only reliable data are given. From these data the
following conclusions are drawn:

- 1.) Up to a height of 95 km there is no noticeable
separation of oxygen and nitrogen.
- 2.) At a height of from 85 up to 95 km the content of
argon is lower than on the surface of the earth.
This decrease of argon content is, however, relatively
slight.

Discussion of Results: By compiling all data obtained
existing a rather varicolored picture is obtained. The
results of the samples extracted by means of balloons
are similar to one another but are in contradiction to
theory. The data obtained by means of the mass spectrometry

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The Investigation by Means of Rockets of the Composition of the Atmosphere at Great Heights

meter are in contradiction to the results of the analysis of the air samples. Besides, the rates of the settling of the extraction of samples may be questionable. For all these reasons the results obtained have to be treated with caution and suspicion. Also the results of mass spectroscopic investigations, according to which at a height of 37 km there occurs a substantial modification of the content of nitrogen and argon, cannot be looked upon as quite serious because the entire experiment is full of unclearness. The measuring error for rare frequency mass spectra is by the way rather considerable (25-30%) and an already existing separation of gases due to gravitation may be added by this measuring error. Differences between Soviet and American works are pointed out. When summarizing the results of all direct investigations of the chemical composition of the atmosphere at heights of the order of 100 km it must be admitted that hitherto this problem has not been solved.

CARD 4/5

53-1b-12/18

The Investigations by Means of Rockets of the Composition
of the Atmosphere at Great Heights.

It may only be said (with an accuracy of up to 1%) that
the atmosphere up to a height of 100 km is an oxygen-
nitrogen atmosphere.
(With 8 illustrations and 2 tables)

ASSOCIATION: not given.
PRESENTED BY: -
SUBMITTED: -
AVAILABLE: Library of Congress.

CARD 5/5

1005/15.4

AUTHOR: MIRTOV, B.A., ISOMIN, V.G. 53-1b-15/18
 TITLE: The Investigation of the Ionic Composition of the Ionospheric Strata. (Issledovaniye ionosfery sostoivashchaya iz raznykh sloyez atmosfery, Russian)
 PERIODICAL: Uspekhi Fiz. Nauk, 1957, Vol. 61, No. 1, pp. 1-11 (U.S.S.R.)

ABSTRACT: Investigations of this kind are very important for the solution of some geophysical and astronomical problems, e.g., the earth problem and for the propagation of radio waves. Before artificial satellites existed, only more or less reliable qualitative data on the composition of the ionized strata were available.

An artificial satellite and the study of the spectrum of ions in the ionosphere: An artificial satellite offers great advantages for such an investigation for it permits manifold and almost simultaneous observations at points many thousand kilometers distant from one another. Satellites are also well suited for the investigation of the change of ion composition in the course of time. The ion composition by day and by night can also be determined. Because of the elongated elliptic shape of the orbit of the satellite the ion composition in various latitudes above the earth can also be determined. By means of artificial satellites the most important layers of the ionosphere can be determined, namely the E-layer and the F-layer. Furthermore, the investigation

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The Investigation of the Ionic Composition
of the Ionized Atmospheric Strata.

54-15-15/28

of the satellite (except in the region of the ionosphere) is
not contaminated by particles of gas.

Some general problems connected with the experiments The speed of
the satellite is by one magnitude greater than the magnitude of
speed of the molecules of the medium surrounding it. This presents
very great difficulties to be overcome by the investigator. Above
all it has to be determined whether the apparatus on board the
satellite measures true or the fictive variations. As a result of
the author the investigation caused by the satellite in its environment
can be neglected. The high vacuum developed inside of the
satellite due to its high speed also presents difficulties.

Instruments for the direct study of ionic composition of the
upper atmosphere: The mass spectrometers are the instruments
best suited for this purpose. But the "magnetic" mass spectrometers
are only little suited for operation on a satellite.
But there exists quite a number of mass spectrometers suitable
for this purpose, e.g. the radio-frequency mass spectrometer.

The BERNETT type radio-frequency mass spectrometer works according
to the principle of the separation of ions according to their
speed. The chief element of this instrument is a mass spectroscopic

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The Investigation of the Ionic Composition
of the Ionized Atmospheric Strata.

53-1b-15/18

tube consisting of a specially constructed electrovacuum tube with four plane-parallel lattices. This equipment is discussed in detail.

Some special problems arising when carrying out the experiment:

A first experimental difficulty is caused by the self-charge acquired by the rocket in the ionosphere. A possible negative charging of the rocket or the satellite causes a change in the manner of operation of the mass spectrometric apparatus. The data hitherto obtained by rockets speak for the expediency of using such mass-spectrometric apparatus in artificial earth satellites. If the orbits are suitably chosen, data concerning polar regions of the earth, which are accessible only with difficulties, may also be obtained. The disturbing influence of the self-charge of a satellite is again emphasized. The self-charge changes also in dependence on the flying height of the satellite, of the geographic coordinates, and on the time of day. Therefore allowance has to be made for the slowing-down potential as dependent on the charge acquired by the satellite. Certain experimental difficulties are also caused by the high speed of the satellite. In

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MIRTEL, BA

29(2)

PHASE I BOOK EXPLOITATION

SOV/2894

Akademiya nauk SSSR

Iskusstvennyye sputniki zemli. vyp. 2: Rezul'taty nauchnykh issledovaniy, poluchennyye pri p.moshchi tret'yego isskusstvennogo sputnika zemli (Artificial Earth Satellites. No 2: Results of Scientific Studies Obtained by the Third Earth Satellite) Moscow, Izd-vo AN SSSR, 1958. 82 p. 3,500 copies printed.

Ed.: L. V. Kurnosova; Ed. of Publishing House: D. M. Alekseyev; Tech. Ed.: Yu. V. Rylina.

PURPOSE: This work is intended for geophysicists, meteorologists, and other scientific and technical personnel engaged in space exploration and research.

COVERAGE: This collection of articles contains certain of the scientific findings recorded by the third Soviet space satellite. Much corroborating data from other rocket and satellite investigations are included. The articles are based on papers originally read at the Fifth Assembly of the

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Artificial Earth Satellites (Cont.)

SOV/2894

of the Special IGY Committee held in Moscow in August, 1958. Individual articles discuss the ionic composition and density of the atmosphere, the thermodynamic parameters of the stratosphere, and questions dealing with the motion of the satellite. References accompany each article.

TABLE OF CONTENTS:

Sedov, L. I.	Dynamic Effects in the Motion of Artificial Earth Satellites	3
Shvidkovskiy, Ye.G.	Some Results in Measuring the Thermodynamic Parameters of the Stratosphere by Means of Meteorologic Rockets	10
Mirtov, B.A.	Perturbations in a Gaseous Medium Caused by the Flight of the Satellite	17
Mikhnevich, V.V.	Preliminary Results in Determining the Density of the Atmosphere Above 100 km	26
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Card 2/4

Uirtov, B. A. Candidate of Physical-Mathematical Sciences
 Leading the Laboratory of the Institute of Applied Geophysics
 of the Academy of Sciences

SV-25-50-7-2046

Our Third Sputnik in the Inverse V & S - Russian
 Satellite

Nauchno-izobretencheskaya i tekhnicheskaya

ABSTRACT

The giant Soviet Sputnik III is almost 10 times heavier than the American satellites. It is carrying a great number of auxiliary and scientific devices, which considerably widen the possibilities of research. The increased supplies of power sources prolong the lifetime of the scientific apparatus. The orbit of the Sputnik covers almost all parts of our planet. Some instruments measure and note the properties of the higher layers of the atmosphere and furnish data on pressure, composition, density and the electromagnetic properties of the atmosphere at high altitudes. Other instruments measure the intensity of the various types of solar radiation and the distribution of photons and heavy nuclei in cosmic rays. Certain apparatus determine the composition and changes in primary cosmic radiation, the electrostatic and magnetic field of Earth, the chemical composition

or Third Sputnik is in the Universe

sition of the atmosphere, the concentration of ions, the
micro-meteora and the density of gas at a certain altitude.
A powerful multi-channel telemetry system is transmitting all
these observations. There are 5 diagrams.

4. CISTI N: Laboratory of the Institute of Applied Mechanics,
USSR, Laboratory of the Institute of Applied Mechanics,
the USSR Academy of Sciences.

1. Satellite vehicle--Sputnik 2. Satellite vehicle--Sputnik 3.

Card 2/2

Name : MIRTOV, B. A.
Title : Candidate of Physico-Mathematical Sciences.
Remarks : B. A. MIRTOV is the author of an article entitled "Our Third
Sputnik is in Outer Space!".
Source : M: Stantsii v Kosmose (Stations in Outer Space), a collection of
articles, published by the USSR Academy of Sciences, Moskva,
1960, with foreword by Academicians A. N . Nesmeyanov and A.
V. Topchiyev, p. 174.

103 10

MIRTOV, Boris Alekseyevich; ISLANKINA, T.F.. red.; ATROSHCHEIKO, L.Ye.,
tekhn.red.

[Interplanetary station] Mezplanetnaya stantsiya. Moskva.
Izd-vo "Znanie," 1960. 29 p. (Vsesoyuznoe obshchestvo po
rasprostraneniю politicheskikh i nauchnykh znaniy. Ser.4,
Nauka i tekhnika, no.3) (MIRA 13:2)
(Space stations)

MIRTOV, B.A.

Meteoric matter and some problems in the geophysics of the high
layers of the atmosphere. Isk.sput.Zem. no.4:118-134 '60.
(MIRA 13:5)

(Meteors) (Atmosphere, Upper)

81844

S/033/60/037/03/013/027
EO32/E514

3.9000

AUTHOR: Mirtov, B. A.

TITLE: On the Mechanism of Formation of a Meteor Trail

PERIODICAL: Astronomicheskii zhurnal, 1960, Vol 37, Nr 3,
pp 513-516 + 1 plate (USSR)

ABSTRACT: The interaction of a meteor body with the molecules of the terrestrial atmosphere has been discussed in sufficient detail in Refs 1-4. The present paper is concerned with a special case of this phenomenon, namely, the different behaviour of fast and slow molecules (atoms) leaving the surface of the meteor and taking part in the initial stage of formation of the meteor trail. In the study of the interaction of a meteor with the surrounding gas, one must distinguish two types of molecular streams leaving the body of the meteor, namely, streams of relatively slow "thermal" molecules leaving the surface with velocities of the order of 1-2 km/sec and streams of fast molecules leaving the surface after elastic collisions with velocities exceeding the velocity of the meteor itself.

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S/033/60/037/03/013/027
E032/E514

On the Mechanism of Formation of a Meteor Trail

In addition to the difference in velocities, there are differences in composition. In the first case most of the molecules are those of the substance of which the meteor itself is made, while in the second case the molecules originally belong to the surrounding gas. Molecules of either type have sufficient energy to give rise to dissociation, ionization and excitation in the surrounding medium, thus leading to the appearance of a trail. A detailed analysis of the phenomenon shows that the molecules (atoms) of the substance of which the meteor is made and also molecules of the medium surrounding the meteor, which have given up all their energy to the meteor and have re-evaporated, cannot travel to a large distance from the meteor and hence experience their first and most effective (from the point of formation of the trail) collisions in the immediate neighbourhood of the surface of the meteor.

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These molecules form a narrow trail of excited and

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E032/E514

On the Mechanism of Formation of a Meteor Trail

ionized gas. At high densities this trail is sufficiently bright and its diameter is not very much greater than the diameter of the meteor itself. The molecules of the medium, which have been elastically reflected at the surface of the meteor, form a wide trail having a diameter of the order of 2λ , where λ is the mean free path. The second trail surrounds the brighter central one. The outer trail should, as a rule, be weaker owing to the smaller number of collisions per unit volume. However, in the case of a fast meteor the opposite situation may occur. The above picture should be observed in the very first stages of the development of a trail. The situation is illustrated in Fig 2 showing a cylinder of ionized gas surrounding the trajectory of a bright meteor (Ref 6). Acknowledgment is made to L. A. Katasev for his interest and assistance.

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81844

S/033/60/037/03/013/027
EO32/E514

On the Mechanism of Formation of a Meteor Trail

There are 2 figures and 7 references, 5 of which
are Soviet and 2 English.

ASSOCIATION: Institut Prikladnoy geofiziki Akademii nauk SSSR
(Institute of Applied Geophysics, Ac.Sc., USSR)

SUBMITTED: July 8, 1959

Card 4/4

4

MIRTOV, Boris Alekseyevich; KHVOSTIKOV, I.A., doktor fiz.-matem. nauk, otv.
red.; LEKSINA, I.Ye., red. izd-va; POLYAKOVA, T.V., tekhn.red.

[Gas composition of the earth's atmosphere and methods for its
analysis] Gazovyi sostav atmosfery Zemli i metody ego analiza.
Moskva, Izd-vo Akad. nauk SSSR, 1961. 261 p. (MIRA 14:10)
(Atmosphere)

22368

S/C 61 000 10 1004 104
D045 D112

17 2400 4112
3.2400
AUTHOR:

Mirtoev, Boris Alekseyevich, Institute of Physics-Mathematics
Sciences

TITLE:

Geophysics and the cosmos

PERIODICAL:

Tekhnika molodezhi, no. 6, 1961, 21

TEXT: The author, in discussing the two radiation belts surrounding the Earth, states that the inner belt located at 2000 km altitude contains hydrogen protons and that the outer belt located at 50,000 km altitude contains electrons. The high-energy elementary particles of both these belts move at tremendous speed. Thus, space is in fact full of intense physical processes. Cosmonauts encounter great danger when passing through these belts, since the collision of a spaceship with fast charged particles causes powerful x-ray irradiation. In the proton belt, the amount of this irradiation is 20-40 roentgens per hour and in the electron belt it is 100 roentgens per hour; a dose of 400 roentgens being lethal to man. Protection against irradiation, particularly hard x-ray irradiation, is extremely complicated. Lead shields several tens of centimeters thick are required in

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22368

Geophysics and the Cosmos

3/0 9/61/00/00/004/004
DO4/ D11/

to protect a man passing through the proton ring in a spaceship. Ir-
radiation against irradiation in the electron belt is much simpler, since
electrons possess less energy and their current promotes the occurrence of
high x-ray irradiation. The presence of these harmful layers has de-
termined the flight altitude of a manned spaceship as being between 10 and
100 km from the Earth's surface. A other danger facing spacemen is the pre-
sence of solid meteoric matter, nearly 5000 t of which enters the Earth's
atmosphere daily. Fortunately, the chances of a spaceship coming into con-
tact with a meteoric particle large enough to pierce a 10-mm-thick aluminum
plate are slim. It has been established that the chromospheric flares on
the sun, which as radiation belts are sources of powerful x-ray and corpus-
cular irradiation, are rare and therefore present little danger to spacemen.
The first Soviet manned space flight proved the correctness of preliminary
calculations. At increased speeds, the meteoric danger will also increase.
It is solved by virtually converting the rocket into an "x-ray generator". The
solution of the problem of making flights to the stars safe to man is still
a matter of the future, but not necessarily of the distant future.

Page 1/2

3.2300

11.1530

AUTHOR:

Mirtov, B. A.

TITLE:

Rockets, satellites, and the upper atmosphere there

PERIODICAL:

Prirada, No. 1, 1961, p. 1.

TEXT: This article deals with investigation of the physical parameters of the upper atmosphere, including the density, temperature, composition, density, temperature and pressure. The results of the investigation of the frequency of micrometeorite showers are presented. The investigation of the upper atmosphere, very important for the study of the upper atmosphere (some of which can remain stable in space for a long time, if radiation) and others which can be retained in the upper atmosphere. The latter can be separated from the "parasite" gases. Investigation of the "parasite" gases evaporating from the surface of the upper atmosphere. Investigation of the composition of the atmosphere up to 100 km. Investigation of the layers, ozone layer, layers of the upper atmosphere, etc. This, however, does not mean that a large number of layers exist. The actual "thickness" of the upper atmosphere is not exist. The actual "thickness" of the upper atmosphere is not exist.

Card 1/6

27571

Rockets, satellites, and navigation. . .

does not exceed 7-9% of the quantity of ions. The maximum altitude that has been explored up to now is 1,000 km. (on the third Soviet artificial earth satellite). The results of Soviet investigations of the ionosphere largely agree with those obtained by American scientists at Churchill, Canada, although there are certain discrepancies which were revealed by the third satellite. It has been noticed that there are day-to-day variations in the relative concentration of positive ions, and that there is a certain increase of the relative concentration of the atomic oxygen ions from the northern to the southern latitudes. Although these observations have not yet been developed into a theory they can be explained by the fact that the flows of charged ionizing particles enter the atmosphere mainly above polar districts, while the sun's ultraviolet and X-ray radiation spreads equally over the whole planet. On the grounds of an analysis of chemical and photochemical reactions and their comparison with the above-mentioned experimental data, A. D. Danilov (Ref. 10) has proposed a "photochemical type of ionization" ("Artificial Earth Satellites", p. 100, 1960). This is needed in explaining the artificial ionosphere. The author of the present article is trying to calculate the ionosphere of the artificial satellite. The 1st min has found out the percentage of the positive ions in the ionosphere.

Card 2/1r

27471

Rockets, satellites, and investigations ...

altitude of 1,600 km is very low. ... in a narrow interval of from 1,600 to 1,800 km ... ducts of a disintegration ... [Ref. 1, p. 106]. The degree of ... (appr. 100 km) permits the ... the E-layer has a "meteor" ... have established an ... taking into consideration ... khunkov [Ref. 1, p. 106]. "News of the AS USSR, ... [Ref. 1, p. 106] ... associates have registered ... Its ... altitude of 100-200 km ... tion remains in the form ... of the earth's ... ionospheric ... since these ... to consideration ...

Part 4/6